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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,658	10/13/2000	TOKURO OZAWA	107260	7418

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

18

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/689,658

Applicant(s)
OZAWA

Examiner
Amr Awad

Art Unit
2675



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 25, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-26 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 19 is/are allowed.
- 6) ☒ Claim(s) 10-16, 18, and 20-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kusada (5,192,945).

As to independent claim 15, Kusada (figure 13) teaches sampling and hold switches (150 and 151) that samples a first analog signal (video signal V1, V2 & V3)(col. 20, lines 51-68), A/D converters (A/D 101 to 106 in figure 14) for converting a first analog signal that is supplied through a corresponding sampling switches (col. 21, lines 52-58), a storage device (latches 129-134) storing digital signal(col. 23, lines 1-5), and D/A converters, each D/A converter converts the digital signal held in the corresponding latches into a second analog to digital signal to be supplied to the plurality of pixels (col. 23, lines 1-8).

As to claim 18, as can be seen in Kusada's figure 14, the storing device (buffers 107-112) stores the digital signal obtained from the A/D in parallel (i.e., within a fixed period).

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Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10, 12, 14, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Kusada (US patent NO. 6,256,024) in view of Kanai et al. (US patent NO. 6,034,666; hereinafter referred to as Kanai).

As to independent claim 10, Kusada (figure 13) teaches sampling and hold switches (150 and 151) (col. 20, lines 51-62), N number of A/D converters (A/D 101 to 106 in figure 14) for converting a first analog signal that is supplied through a corresponding sampling switches (col. 21, lines 52-58), N number of latches (129-134) storing digital signal(col. 23, lines 1-5), and an N number of D/A converters, each D/A converter converts the digital signal held in the corresponding latches into a second analog to digital signal to be supplied to the plurality of pixels (col. 23, lines 1-8).

Kusada does not expressly teach that the number of analog to digital converters is similar to the number of the digital to analog converter and supplied to switches (latches).

However, Kanai (figure 17) teaches a display device that includes an N analog to digital converters (6R1, 6R2, 6G1, 6G2, 6B1, 6B2, 6Y1, 6Y2) which is equal to the number of N latches

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(switches 9) and an N D/A converters (8R1, 8R2, 8G1, 8G2, 8B1, 8B2, 8Y1, 8Y2) (col. 15, lines 4-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Kanai having similar numbers of sampling switches, latches and D/A converters to be applied to Kusada's device so as to simplify the interface with the personal computer, as well as to avoid color breakup (col. 6, lines 28-31).

As to independent claim 12, the claim is substantially similar to independent claim 10 adding to it the limitation of M number of scanning lines. As can be seen in figure 1, Maekawa (figure 1) teaches M number of scanning lines (19-1, 19-2, ...).

As to independent claim 14, the claim is similar to the limitations of claims 11 and 12, and would analyzed similarly as claims 10 and 12.

As to independent claims 24 and 25, the limitations in claims are substantially similar to claims 10 and 12 and is analyzed as previously discussed with respect to claims 10 and 12.

5. Claims 16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusada in view of Maekawa (US patent NO. 6,256,024).

As to claim 16, Kusada teaches all the limitations of claim 16 except the citation of having the sampling switches and the D/A in the same substrate.

However, Maekawa teaches that the N sampling switches, the N latches and the N D/A converters being disposed on one substrate (col. 3, lines 48-53).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Maekawa having the driving elements disposed on one substrate to be included in Kusada's device so as to reduce the size of the liquid crystal driving area as well as to reduce the cost.

As to claims 20-23, Maekawa teaches a driving circuit for thin film transistor liquid crystal display that can be in personal computer; see figure 1 and col. 2, lines 18-21.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Maekawa having a thin film transistor liquid crystal display to be used in Kusada's device so as to increase the versatilities of the device.

6. Claims 11, 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusada and Kanai in view of Maekawa.

As to claim 11, Kusada and Kanai teach all the limitations of claim 11 except the citation of having the sampling switches and the D/A in the same substrate.

However, Maekawa teaches that the N sampling switches, the N latches and the N D/A converters being disposed on one substrate (col. 3, lines 48-53).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Maekawa having the driving elements disposed on one substrate to be included in Kusada's device so as to reduce the size of the liquid crystal driving area as well as to reduce the cost.

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As to claims 13 and 26, Maekawa teaches that the LCD can be used for electronic apparatus (personal computer) (col. 2, lines 18-21).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the device in a personal computer so as to increase the versatilities of the device.

Allowable Subject Matter

7. Claims 17 and 19 are allowed.

Response to Arguments

8. Applicant's arguments with respect to claims 10-16, 18 and 20-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. **Any response to this final action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703) 308-8485.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached on (703) 305-9720.

A handwritten signature in black ink, appearing to read 'Amr A. Awad', with a stylized, sweeping flourish at the end.

Amr A. Awad

07/26/2003.